Brookhaven National Laboratory
Plant Engineering - E&CS Division
Engineering Change Notice Form

PROJECT: CCWF II **JOB No.** 11705

ECN Title: Electrical Site Plan and Conduit Details **ECN No.** 33

Affected Documents: ES-101, EP-301, CE-03, CE-05, EP-302, ES-402

Requested Change (Attach sketch if applicable): Re-designed the electric duct banks and their routing from substation 600-B to bldg 600 to segregate 4160V, 120V and control meter wiring.

2 communications manholes are not required

Reinforcing bars are not required for these duct banks.

Requested by: D. Danseglio Date: 04/29/10

Resolution: See the attached marked up drawings for new layout and details.

Approvals: A/E or Proj. Eng.: B. Kimble Date: 04/29/10

Project Coordinator: A. Raphael Date: 04/29/10

Manager: Date:

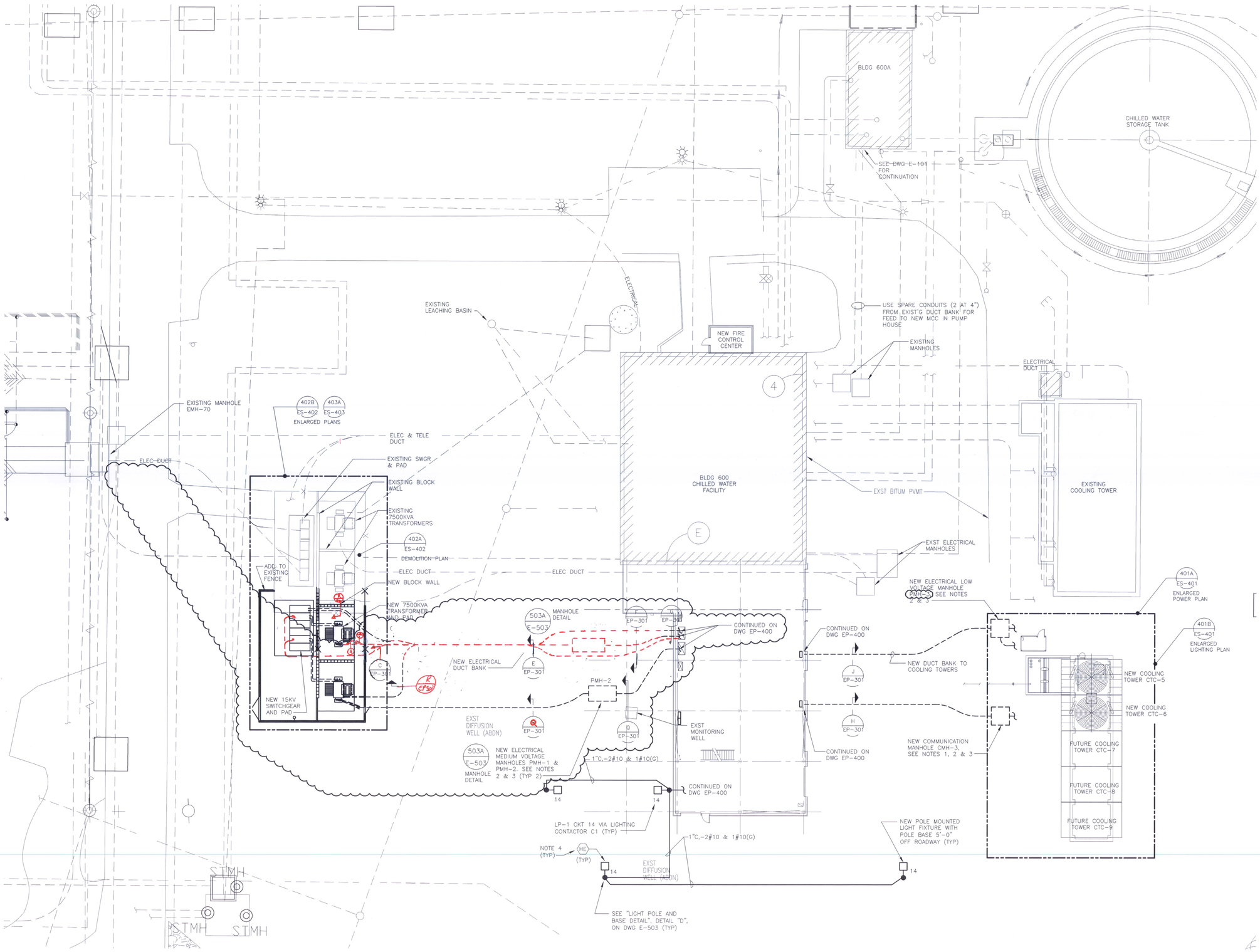
Contractor shall take the following action:

- ☐ Await change order from P&PM
- ☒ Proceed with change as described
- ☒ Provide cost proposal for change as described

Distribution:

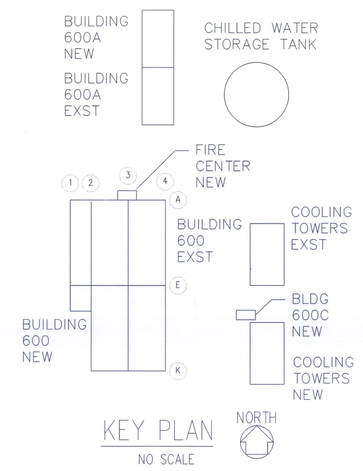
E. W. Howell	Giffels	PPM
E&U	MPO	
O&M	DOE	
NSLS II	ECN File	

Date (mmm dd yyyy)	Issued For	Rev.
09-21-2007	TITLE 1 60% REVIEW	A
10-24-2007	TITLE 1 100% COMPLETE	B
12-07-2007	TITLE II DESIGN 30% REVIEW SUBMITTAL	C
03-28-2008	TITLE II DESIGN 60% REVIEW SUBMITTAL	D
07-31-2008	TITLE II DESIGN 90% REVIEW SUBMITTAL	E
08-25-2008	TITLE II DESIGN 100% OWNER REVIEW	F
02-19-2009	TITLE II CONSTRUCTION BID ISSUE	0
08-03-2009	REVIEW MODIFIED PER ADDENDUM 2	L
08-26-2009	MODIFIED PER ADDENDUMS 2 AND 3	1



ELECTRICAL SITE PLAN

SCALE: 1" = 15'-0"



KEY PLAN

NO SCALE

This drawing has been prepared solely for the use of Brookhaven National Laboratory, and there are no representations of any kind made by Giffels, Partnership to any party with whom Giffels, Partnership has not entered into a contract.

This drawing shall not be used for construction purposes until the seal and signature of the responsible registrant appears on the drawing, and proper permit forms and related fees are transmitted by the Owner, Owner's Agent or Contractor to the Authority Having Jurisdiction.

NOTES:

1. INSULATION LEVEL OF CABLES INSTALLED IN LOW VOLTAGE MANHOLE SHALL BE PER NEC ARTICLE 775.
2. SEE DRAWING EP-302 FOR MANHOLE LOCATION, ELEVATION AND DUCT BANK ENTRY.
3. SEE BROOKHAVEN NATIONAL LABORATORY FOR ACTUAL MANHOLE NAME AND NUMBER.
4. LIGHTING FIXTURE TYPE – REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING E-501.

Giffels
An Ingenium Group Company
25200 Telegraph Rd
Southfield, MI 48034
Tel. 248-936-8000
Fax 248-936-8111

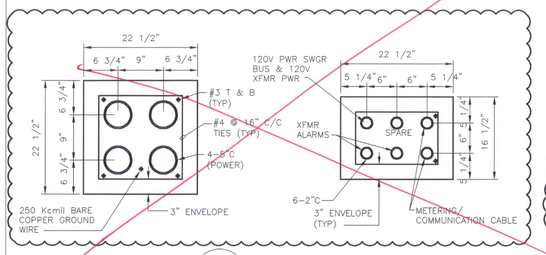
Approved By: R BARTOY
Project Manager: G KAPLAN
Project Engineer/Architect: J BOSSORY
Project No.: SF070003

JOB NO	SHEET NO	REVISION	DATE	DWN.	APP'S.	QA
		A				

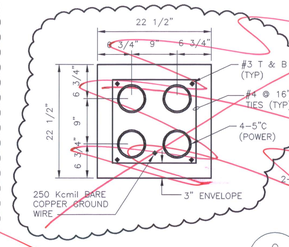
BROOKHAVEN NATIONAL LABORATORY
UNDER CONTRACT WITH
UNITED STATES DEPARTMENT OF ENERGY
PLANT ENGINEERING DIVISION
UPTON, NEW YORK 11973

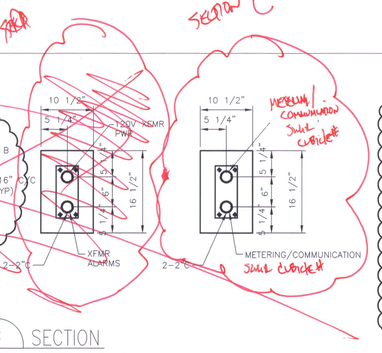
JOB TITLE: CENTRAL CHILLED WATER FACILITY PHASE II				DWG. TITLE: ELECTRICAL SITE PLAN	
ILR,GPP,JM, HEM	DATE		ACCT. NO.	SHEET	OF
SCALE: AS NOTED	DWN. BY: EA	REV'D BY: RB	JOB NO. 11705	DWG. NO. ES-101	
ESHQ RISK LEVEL	APP'D. BY: R BARTOY		BLDG. NO. 600		
PATH:					

Date (mmm dd yyyy)	Issued For	Rev.
08-25-2008	TITLE II DESIGN 100% OWNER REVIEW	F
02-19-2009	TITLE II CONSTRUCTION BID ISSUE	0
08-03-2009	REVIEW MODIFIED PER ADDENDUM 2	L
08-26-2009	MODIFIED PER ADDENDUMS 2 AND 3	1

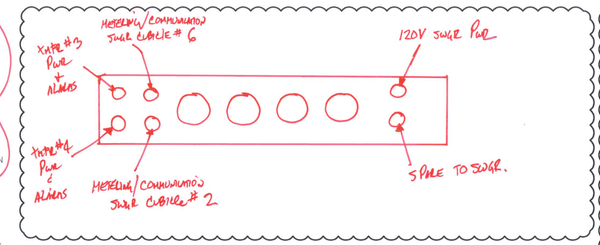


D SECTION
ES-101 SCALE 1" = 1'-0"

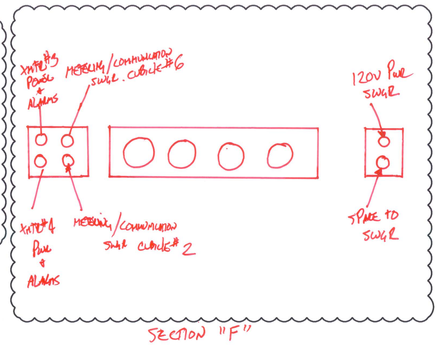




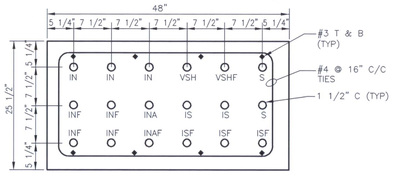
C SECTION
ES-101 SCALE 1" = 1'-0"



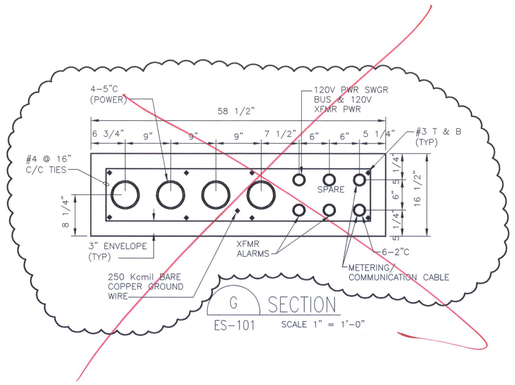
SECTION "G" AND SECTION "E"



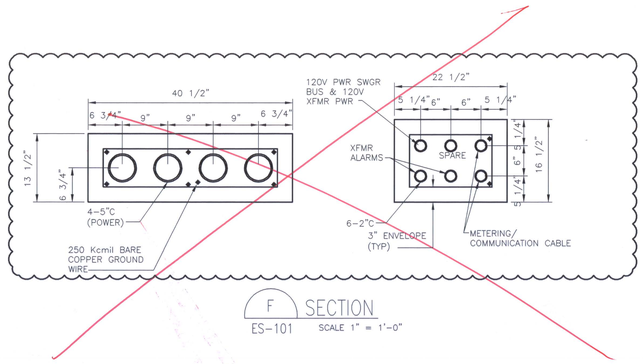
SECTION "F"



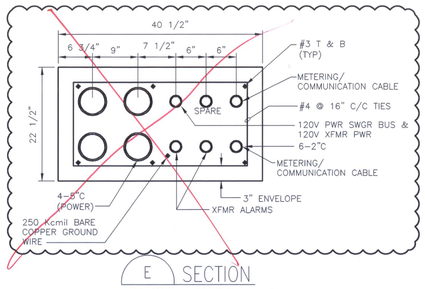
H SECTION
ES-101 SCALE 1" = 1'-0"



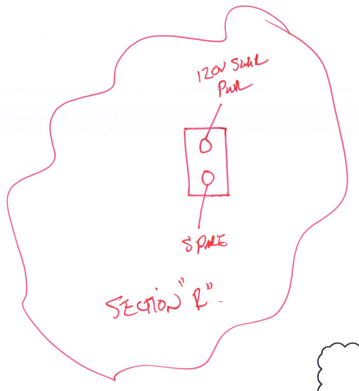
G SECTION
ES-101 SCALE 1" = 1'-0"

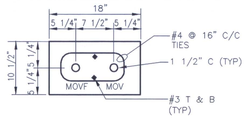


F SECTION
ES-101 SCALE 1" = 1'-0"

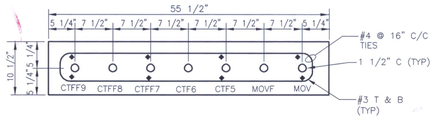


E SECTION
ES-101 SCALE 1" = 1'-0"

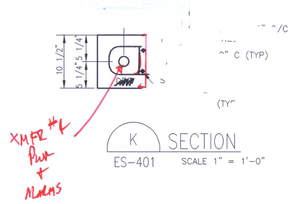




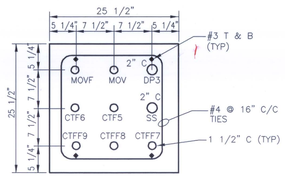
M SECTION
ES-401 SCALE 1" = 1'-0"



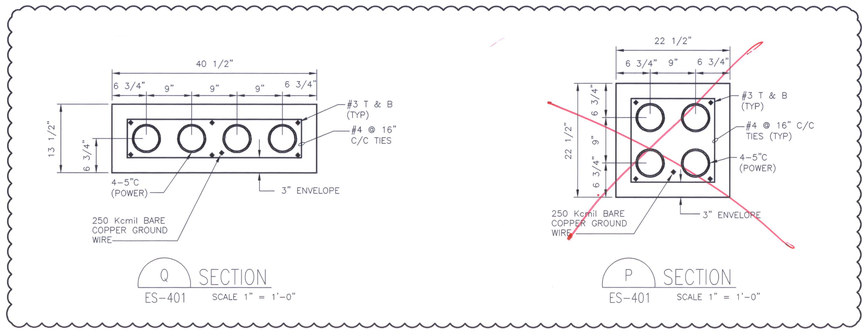
L SECTION
ES-401 SCALE 1" = 1'-0"



K SECTION
ES-401 SCALE 1" = 1'-0"

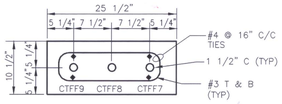


J SECTION
ES-101 SCALE 1" = 1'-0"

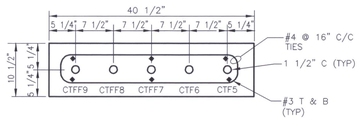


Q SECTION
ES-401 SCALE 1" = 1'-0"

P SECTION
ES-401 SCALE 1" = 1'-0"



O SECTION
ES-401 SCALE 1" = 1'-0"



N SECTION
ES-401 SCALE 1" = 1'-0"

LEGEND

CTF CONDUIT BETWEEN COOLING TOWER FAN MOTORS AND ADJUSTABLE FREQUENCY CONTROLLERS ON ELECTRICAL MEZZANINE
NOTE: CONDUIT UP THRU OPENING IN OPERATING FLOOR THRU SLEEVES IN ELECTRICAL MEZZANINE FLOOR FOR BOTTOM ENTRY INTO DRIVE.

CTFF FUTURE CONDUIT BETWEEN FUTURE COOLING TOWER FAN MOTORS AND FUTURE ADJUSTABLE FREQUENCY CONTROLLERS ON ELECTRICAL MEZZANINE. AT COOLING TOWER TAKE CONDUIT TO FUTURE LOCATION OF TOWERS AND STUB-UP AND CAP. AT ENTRY INTO PIPE TUNNEL LEVEL, TURN CONDUIT UP THRU OPENING IN OPERATING FLOOR AND CAP FOR FUTURE EXTENSION TO DRIVES.

DP3 CONDUIT FROM MCC-600-3 TO PANEL DP-3, BLDG 600C.

IN CONDUIT BETWEEN I/O CONTROL PANEL 600-IN AND DI/DO JUNCTION BOX AT COOLING TOWERS FOR CELLS 5 AND 6 DISCRETE CABLES.

INA CONDUIT BETWEEN I/O CONTROL PANEL 600-IN AND AI JUNCTION BOX AT COOLING TOWERS FOR CELLS 5 AND 6 DISCRETE CABLES.

INAF CONDUIT BETWEEN I/O CONTROL PANEL 600-IN AND AI JUNCTION BOX AT COOLING TOWERS FOR FUTURE CELLS 7, 8 AND 9 ANALOG CABLES
NOTE: TAKE DUCT BANK CONDUIT INTO PIPE TUNNEL LEVEL AND CAP FOR FUTURE EXTENSION TO I/O PANEL.

INF CONDUIT BETWEEN I/O CONTROL PANEL 600-IN AND DI/DO JUNCTION BOX AT COOLING TOWERS FOR FUTURE CELLS 7, 8 AND 9 DISCRETE CABLES
NOTE: TAKE DUCT BANK CONDUIT INTO PIPE TUNNEL LEVEL AND CAP FOR FUTURE EXTENSION TO I/O PANEL.

MOV CONDUIT FROM MCC-600-3 TO MOV'S 714, 715 AND 716.

MOVF FUTURE CONDUIT FROM MCC-600-3 TO FUTURE COOLING TOWER MOV'S
NOTE: TAKE DUCT BANK CONDUIT INTO BUILDING 600 AND STUB-UP ABOVE OPERATING LEVEL FLOOR AND CAP. AT COOLING TOWER, TAKE CONDUIT TO FRONT OF CELL 6 AND CAP FOR FUTURE EXTENSION.

IS CONDUIT BETWEEN I/O CONTROL PANEL 600-1S AND DI/DO JUNCTION BOX AT COOLING TOWERS FOR CELLS 5 AND 6 DESCRETE CABLES.

ISF CONDUIT BETWEEN I/O CONTROL PANEL 600-1S AND DI/DO JUNCTION BOX AT COOLING TOWERS FOR FUTURE CELLS 7, 8 AND 9 DISCRETE CABLES.
NOTE: TAKE DUCT BANK CONDUIT INTO PIPE TUNNEL LEVEL AND CAP FOR FUTURE EXTENSION TO I/O PANEL.

S SPARE CONDUIT - BRING INTO PIPE TUNNEL LEVEL AND CAP.

SS SPARE CONDUIT - BRING CONDUIT INTO PIPE TUNNEL THEN UP THRU OPENING IN OPERATING LEVEL FLOOR AND CAP.

VSH CELL 5 & 6 COOLING TOWERS FAN VIBRATION SWITCHES AND MOTOR HEATERS CONDUIT TO ADJUSTABLE FREQUENCY CONTROLLER ON ELECTRICAL MEZZANINE.
NOTE: CONDUIT UP THRU OPERATING LEVEL FLOOR OPENING THRU SLEEVE IN ELECTRICAL LEVEL MEZZANINE FLOOR FOR BOTTOM ENTRY INTO DRIVES.

VSHF FUTURE COOLING TOWERS CELLS 7, 8 & 9 FAN VIBRATION SWITCHES AND MOTOR HEATERS CONDUIT TO COOLING TOWER FAN MOTOR ADJUSTABLE FREQUENCY CONTROLLERS.
NOTE: AT COOLING TOWER STUB-UP CONDUIT AT CONTAINMENT WALL AND CAP FOR FUTURE EXTENSION TO FUTURE CELLS 7, 8 & 9. AT ENTRY INTO PIPE TUNNEL LEVEL, TURN CONDUIT UP THRU OPENING IN OPERATING FLOOR AND CAP FOR FUTURE EXTENSION TO DRIVES FOR CELLS 7, 8 AND 9 FAN MOTORS.

NOTES:

1. REFER TO DRAWING E-001 FOR ELECTRICAL ABBREVIATIONS, GENERAL NOTES AND DRAWING LIST AND DRAWING E-002 FOR ELECTRICAL SYMBOLS.

This drawing has been prepared solely for the use of Brookhaven National Laboratory and there are no representations of any kind made by Giffels, Partnership to any party with whom Giffels, Partnership has not entered into a contract.

This drawing shall not be used for construction purposes until the seal and signature of the responsible registrant appears on the drawing, and proper permit forms and related fees are transmitted by the Owner, Owner's Agent or Contractor to the Authority Having Jurisdiction.

It is a violation of New York State Law Article 7209 for any person, unless he is acting under the direction of a licensed professional engineer or land surveyor, to alter an item in any way. If an item bearing the seal of an engineer or land surveyor is altered, the altering engineer or land surveyor shall affix to the item his seal and the notation "altered by" followed by his signature and the date of such alteration, and a specific description of the alteration.

JOB NO.	SHEET NO.	REVISION	DATE	DWN.	APP'D.	QA

BROOKHAVEN NATIONAL LABORATORY
UNDER CONTRACT WITH
UNITED STATES DEPARTMENT OF ENERGY
PLANT ENGINEERING DIVISION
UPTON, NEW YORK 11973

Giffels, Partnership
25200 Telegraph Road, Suite 200
Southfield, Michigan 48033 USA
Tel. 248-936-8000
Fax 248-936-8111

Approved By
Project Manager C. KAPLAN
Project Engineer/Architect
Project No. SF070003

JOB TITLE	CENTRAL CHILLED WATER FACILITY PHASE II
DWG. TITLE	ELECTRICAL SECTIONS
ILR,GPP,LNI, HEM	
DATE	
ACCT. NO.	
SHEET OF	
SCALE	AS NOTED
DWN. BY	EA
REV'D BY	RB
JOB NO.	11705
DWG. NO.	EP-301
ESHQ RISK LEVEL	
APP'D. BY	R BARTOY
BLDG. NO.	600
PATH:	